PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 09/933,468 Applicant : Christopher S. MacLellan Filed : August 20, 2001 T.C./A.U. : 2138 Examiner : John J. Tabone, Jr. Docket No. : EMC-01-018 Customer No. : 24227	Confirmation No.: 5620

Certificate of Mailing or Transmission 37 C.F.R. § 1.8

I hereby certify that this correspondence is being transmitted by facsimile on the date shown below to the Patent and Trademark Office at 571-273-8300.

Typed or printed name of person signing this Certificate:

Linda Valanzola

6/12/06 Linda Valanzola

Date *Signature*

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

DECLARATION UNDER 37 C.F.R. §1.131

1. I, Christopher S. MacLellan, am the inventor of the above-referenced U.S. Patent Application No. 09/933,468 entitled "Testing System and Method of Using Same."

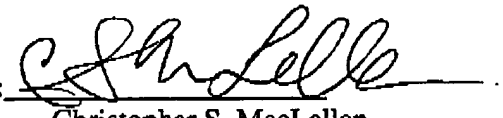
2. Prior to September 14, 2000, I conceived of, and reduced to practice, the invention described and claimed in U. S. Patent Application No. 09/933,468, as evidenced by source code, a portion of which being attached hereto as Exhibit A. The code was created on or before September 14, 2000 as is evidenced by the time stamp at the top of the file of the Exhibit indicating that the file A20SVC.v was last modified on September 14, 2000.

Since this is the assignee's proprietary source code, only a portion of the code is included in the Exhibit. The code in its entirety comprises the third logic section recited in the claims.

Exhibit B is an email dated March 20, 2001 in which an invention disclosure conference is scheduled. One of the invention disclosures to be discussed at that conference is the invention described in this U. S. Patent Application No. 09/933,468, i.e., Docket No. EMC-01-018. This invention disclosure is attached as Exhibit C. I note that, although the "Date of Idea (or first disclosure either or written to others)" indicates a date of 11/15/01, this is a typographical error. The intended date was 11/15/2000, which was the date that I first disclosed the invention to others. The typographical error should be obvious, given that the invention disclosure conference was scheduled in March 2001 and the patent application was filed in August 2001.

3. All of the statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true. These statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under § 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application and any patent issuing thereon.

6-12-2006
Date of Signature

By: 
Christopher S. MacLellan

```
> ls -lat A20SVC.v
-rw-r--r--   1 chrismac symmem     101745 Sep 14  2000 A20SVC.v
> cat A20SVC.v
/* A20 Service Processor */

module A20SVC(CLOCK,
              RESET,
              SRESET,
              MID,

              // UI A Interface
              REQA,      // 0 = Request
              GNTA,      // 0 = Request grant
              TAGA,      // 18-bit TAG field from UI
              CMDA,      // 18-bit COMMAND field from UI
              AD2A,      // 18-bit ADDRESS 2 field from UI
              AD1A,      // 18-bit ADDRESS 1 field from UI
              AD0A,      // 18-bit ADDRESS 0 field from UI
              SDIA,      // 18-bit service data from UI
              SDOA,      // 18-bit service data to UI
              SDCRC1A,   // 18-bit Service data CRC high from UI
              SDCRC0A,   // 18-bit Service data CRC low from UI
              SDONEA,    // 1 = Service Done to UI
              SDRA,      // 1 = Service Data request to UI
              SDVA,      // 1 = Service Data valid to UI
              SERRA,     // 1 = Service Error to UI
              SCRCEA,    // 1 = Service Data CRC Error to UI
              INTERRA,   // 1 = Internal Error to UI
              NOCYCA,    // 1 = No Cycle Indication from UI
              CYCDONEA,  // 1 = Cycle Done Indication from UI
              AW,        // 1 = UI connected with W port
              AX,        // 1 = UI connected with X port
              AY,        // 1 = UI connected with Y port
              AZ,        // 1 = UI connected with Z port
              UTMOVALA,  // 14-bit Upper Timeout Value to UI
              DIAGA,     // 46-bit Diagnostic mode register to UI
              STATA,     // 64-bit Error/Event conduit from UI

              // UI B Interface
              REQB,      // 0 = Request
              GNTB,      // 0 = Request grant
              TAGB,      // 18-bit TAG field from UI
              CMDB,      // 18-bit COMMAND field from UI
              AD2B,      // 18-bit ADDRESS 2 field from UI
              AD1B,      // 18-bit ADDRESS 1 field from UI
              AD0B,      // 18-bit ADDRESS 0 field from UI
              SDIB,      // 18-bit service data from UI
              SDOB,      // 18-bit service data to UI
              SDCRC1B,   // 18-bit Service data CRC high from UI
              SDCRC0B,   // 18-bit Service data CRC low from UI
              SDONEB,    // 1 = Service Done to UI
              SDRB,      // 1 = Service Data request to UI
              SDVB,      // 1 = Service Data valid to UI
              SERRB,     // 1 = Service Error to UI
              SCRCEB,    // 1 = Service Data CRC Error to UI
              INTERRB,   // 1 = Internal Error to UI
              NOCYCB,    // 1 = No Cycle Indication from UI
```

```
CYCDONEB, // 1 = Cycle Done Indication from UI
BW,       // 1 = UI connected with W port
BX,       // 1 = UI connected with X port
BY,       // 1 = UI connected with Y port
BZ,       // 1 = UI connected with Z port
UTMOVALB, // 14-bit Upper Timeout Value to UI
DIAGB,    // 46-bit Diagnostic mode register to UI
STATB,    // 64-bit Error/Event conduit from UI

// UI C Interface
REQC,     // 0 = Request
GNTC,     // 0 = Request grant
TAGC,     // 18-bit TAG field from UI
CMDC,     // 18-bit COMMAND field from UI
AD2C,     // 18-bit ADDRESS 2 field from UI
AD1C,     // 18-bit ADDRESS 1 field from UI
AD0C,     // 18-bit ADDRESS 0 field from UI
SDIC,     // 18-bit service data from UI
SDOC,     // 18-bit service data to UI
SDONEC,   // 1 = Service Done to UI
SDCRC1C,  // 18-bit Service data CRC high from UI
SDCRC0C,  // 18-bit Service data CRC low from UI
SDRC,     // 1 = Service Data request to UI
SDVC,     // 1 = Service Data valid to UI
SERRC,    // 1 = Service Error to UI
SCRCEC,   // 1 = Service Data CRC Error to UI
INTERRC,  // 1 = Internal Error to UI
NOCYCC,   // 1 = No Cycle Indication from UI
CYCDONEC, // 1 = Cycle Done Indication from UI
CW,       // 1 = UI connected with W port
CX,       // 1 = UI connected with X port
CY,       // 1 = UI connected with Y port
CZ,       // 1 = UI connected with Z port
UTMOVALC, // 14-bit Upper Timeout Value to UI
DIAGC,    // 46-bit Diagnostic mode register to UI
STATC,    // 64-bit Error/Event conduit from UI

// UI D Interface
REQD,     // 0 = Request
GNTD,     // 0 = Request grant
TAGD,     // 18-bit TAG field from UI
CMDD,     // 18-bit COMMAND field from UI
AD2D,     // 18-bit ADDRESS 2 field from UI
AD1D,     // 18-bit ADDRESS 1 field from UI
AD0D,     // 18-bit ADDRESS 0 field from UI
SDID,     // 18-bit service data from UI
SDOD,     // 18-bit service data to UI
SDCRC1D,  // 18-bit Service data CRC high from UI
SDCRC0D,  // 18-bit Service data CRC low from UI
SDONED,   // 1 = Service Done to UI
SDRD,     // 1 = Service Data request to UI
SDVD,     // 1 = Service Data valid to UI
SERRD,    // 1 = Service Error to UI
SCRCED,   // 1 = Service Data CRC Error to UI
INTERRD,  // 1 = Internal Error to UI
NOCYCD,   // 1 = No Cycle Indication from UI
CYCDONED, // 1 = Cycle Done Indication from UI
```

Mazzarella, Julie

From: Mazzarella, Julie
Sent: Tuesday, March 20, 2001 11:27 AM
To: walton, john (BMC Eng); maclellan, chris; bermingham, mike; Gupta, Krish; Gagne, Christopher
Subject: Disclosure Conference April 9, 10a.m.-12p.m., Conf. Rm. 21-28 (171 South St.)

Gentlemen,

You will be meeting on Monday, April 9, from 10 a.m. to 12 p.m. in Confrerence Room 21-28 at 171 South Street to discuss the following new invention disclosures:

1. [redacted]
2. [redacted]
3. *System and Method for Reliably Testing Embedded Memory* by Chris MacLellan (EMC-01-018).

Thanks,

Julie Mazzarella
Patent Administrator
Office of the General Counsel
EMC Corporation
35 Parkwood Drive
Hopkinton, MA 01748
[redacted]

[redacted]

EMC-01-018

INVENTION RECORD/DISCLOSURE

1. **Title:** System and Method for Reliably Testing Embedded Memory

2. **Description and purpose of the Invention (include drawings, memos, or other explanatory material:** When embedding memory structures (such as SRAM) into a custom design (such as an ASIC), testing the memory during manufacture of the chip is important. This system provides a way to test the memory, not only during chip manufacture, but also at any time during board test and system test. This system also provides a way to inject a fault into the memory to test the test circuit itself. There is protection built into the system which add to the reliability of the design.

3. **Former approaches and disadvantages:** Prior approaches either required a lot of manual test vector generation, additional chip pins dedicated to the memory test circuit, or both. They also took away from the reliability of the design.

4. **Advantages of Invention over former approaches:** This system does not require additional pins or manual test vectors. It also has built-in protection against inadvertent test circuit interference with system operation.

5. **Inventors:** Christopher S. MacLellan

6. **Date of Idea (or first disclosure either oral or written to others):** 11/15/01